

REMARKS

Entry of this Amendment and reconsideration are respectfully requested in light of the remarks made herein.

Claims 1-20 are pending. Claims 1-4, 6-9, 11-14 and 16-19 stand rejected. Claims 5, 10, 15 and 20 are objected to but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

The examiner has objected to the specification for including informalities in using the label 102 to identify the decoder rather than the label 104.

Applicant thanks the examiner for his observation and has made the appropriate correction to the specification. Having made appropriate correction to the specification, applicant submits that the examiner's object has been overcome and respectfully requests that the objection be withdrawn.

The examiner has objected to the drawings as containing informalities. More specifically, Figure 1 contains reference label 102, which is not mentioned in the description and the specification includes reference to the label 209, which is not shown in the figures.

Applicant thanks the examiner for his observation and has amended the specification to include appropriate reference to the label 102. With regard to the label 209, the applicant has removed this reference from the specification. Accordingly, applicant believes that with the amendments made to the specification, no changes are necessary to the drawings as filed.

Having amended the specification to correctly identify elements in the drawings, applicant submits that the reason for the examiner's objection has been overcome and respectfully requests that the objection be withdrawn.

Claims 1-3, 6-8, 11-13 and 16-18 are rejected under 35 USC§102(e) as being anticipated by Rosenlof (USP No. 6,785,349). It is the examiner's position that Rosenlof discloses each and every element recited in the claims. The examiner has referred to col. 2, line 63- col. 3, line 13 and fig. 4 for feedback paths to allege that Rosenlof discloses

the elements recited in claim 1, for example. The examiner further states that "using a single error vector above Rosenlof meets the limitation of the claim by using the error to improve both the frequency domain equalizer and the slicer in his 'decision feedback equalizer' (col. 3, lines 10-13)."

Applicant respectfully disagrees with, and explicitly traverses, the examiner's reason for rejecting the claims.

Rosenlof, as read by the applicant, teaches a correlator for use in a timing recovery apparatus of a receiver. The correlator locates the beginning of a data frame and initializes a pointer register with an address to a location within the receiver signal buffer. Data is transferred to a signal converter from the receive signal buffer where the samples that are fed into the converter are determined by the address stored in the pointer register.

However, a careful reading of the referred to statements by Rosenlof fails to disclose using a signal error vector, as is recited in the claims. More specifically, col. 2, line 63- col. 3, line 13 discuss a frequency domain equalizer (FEQ) that receives an FFT converted time domain signal that includes a frequency bin corresponding to magnitude and phase of the carrier at the corresponding frequency. The FEQ operates on each of the FFT outputs with a single-tap filter to generate the equalized symbol values. The FEQ outputs are then decoded by a slicer and the "FEQ taps may be updated so as to minimize the error between the FEQ output and the slicer output. This is commonly referred to as decision feedback equalization." However, Rosenlof fails to provide any further details regarding the feedback path or how the taps are updated. Rosenlof fails to teach the element the "frequency domain equalizer and decision feedback equalizer both employ a single error vector to update correction therein," as is recited in claim 1. Furthermore, the examiner has referred to Figure 4 for showing a feedback path. However, Figure 4 illustrates a feedback path for a clock recovery and control circuit 460, and the feedback is from the FFT filter outputs and does not show the slicer or any feedback therefrom. Hence, the use of the slicer output to update the taps is merely conjecture by the examiner that is not taught by Rosenlof.

A claim is anticipated only if each and every element recited therein is expressly or inherently described in a single prior art reference.

Rosenlof cannot be said to anticipate the present invention, as recited in claim 1, because Rosenlof fails to provide any detail with regard to minimizing the error between the FEQ output and the slicer, and more particularly fails to disclose the element of updating using a "single error vector," as is recited in the claim.

Having shown that Rosenlof fails to disclose each and every element claimed, applicant submits that the reason for the examiner's rejection of claim 1 has been overcome and can no longer be sustained. Applicant respectfully requests withdrawal of the rejection and allowance of the claim.

With regard to independent claims 6, 11 and 16, these claims each recite a hybrid equalizer comprising a "frequency domain equalizer and a decision feedback equalizer network both employing a single error vector," as is recited in claim 1 and the examiner has rejected these claims citing the same reference used in rejecting claim 1. Accordingly, the applicant's remarks made in response to the examiner's rejection of claim 1 are also applicable in response to the examiner's rejection of claims 6, 11, and 16. In view of the remarks made with regard to the rejection of claim 1, which are reasserted, as if in full, in response to the rejection of claims 6, 11, and 16, applicant submits that the examiner's rejection of claims 6, 11, and 16 has been overcome and can no longer be sustained. Applicant respectfully requests withdrawal of the rejection and allowance of the claims.

With regard to claims 2, 3, 7, 8, 12, 13, 17 and 18, these claims depend from independent claims 1, 6, 11 and 16, respectively, which have been shown to be allowable in view of the cited reference. Accordingly, these claims are also allowable by virtue of its dependence from an allowable base claim.

Claims 4, 9, 14 and 19 are rejected under 35 USC 103(a) as being unpatentable over Rosenlof in view of Kapoor (EPO 1043875). It is the examiner's position that Rosenlof discloses all the limitations of claims 4, 9, 14 and 19 except disclosing the use of a time domain feedback filter and Kapoor shows the use of a FEQ and TEQ in the same feedback loop. A motivation to combine the two references is disclosed by Van Acker (USP 6,744,821).

Applicant respectfully disagrees with, and explicitly traverses, the examiner reason for rejecting the claims. A claimed invention is prima facie obvious when three basic criteria are met. First, there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings therein. Second, there must be a reasonable expectation of success. And, third, the prior art reference or combined references must teach or suggest all the claim limitations.

Contrary to the examiner's position, the combination of Rosenlof and Kapoor fails to render obvious the present invention because the combined device of Rosenlof and Kapoor, even the teaching of Van Acker could be considered to provide motivation to combine Rosenlof and Kapoor, would not disclose all the elements claimed. As noted previously, Rosenlof fails to recite using a single error vector to update error correction and Kapoor fails to teach using a single error vector for updating. Accordingly, the invention recited in claims 4, 9, 14 and 19 is not obvious in view of the cited references because the combination of the teachings of Rosenlof and Kapoor would not include all the elements claimed.

Having shown that the combination of Rosenlof and Kapoor fails to include all the elements claimed, applicant submits that the reason for the examiner's rejection of the claims has been overcome and can no longer be sustained. Applicant respectfully requests withdrawal of the rejection and allowance of the claims.

Applicant thanks the examiner for his indication of allowable subject matter in claims 5, 10, 15 and 20. However, for the remarks made herein, applicant believes that all the claims are in an allowable form and has elected not to amend the claims at this time. Applicant, however, reserves the right to amend the claims during the pendency of this matter.

Amendment
Serial No. 09/840,203

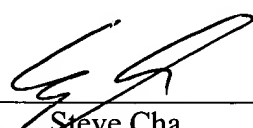
Docket No. US 010189

For all the foregoing reasons, it is respectfully submitted that all the present claims are patentable in view of the cited references. A Notice of Allowance is respectfully requested.

Respectfully submitted,

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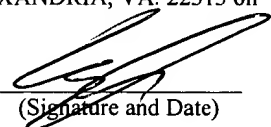

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